

A SYSTEM AND METHOD FOR DYNAMICALLY CONSTRUCTING PACKET  
CLASSIFICATION RULES

ABSTRACT OF THE DISCLOSURE

1004435-1E2704  
A system and method classifies packets with a  
programmably fixed network processor program and  
dynamically updated data structures. The network  
5 processor program selects predetermined packet field  
values of the packets transmitted across the network and  
classifies the packets by matching one or more packet  
field values with a data structure. New packet  
classifications are dynamically created by updating the  
10 data structure to associate one or more predetermined  
packet field values with the new packet classification.  
For instance, a parse tree program extracts packet header  
information and matches the packet header information to  
the data structure. A pattern tree data structure  
15 provides longest prefix matches and an ordered tree data  
structure provides combination matches so that  
classification of arbitrary Boolean combinations of  
extracted header fields can be formed.